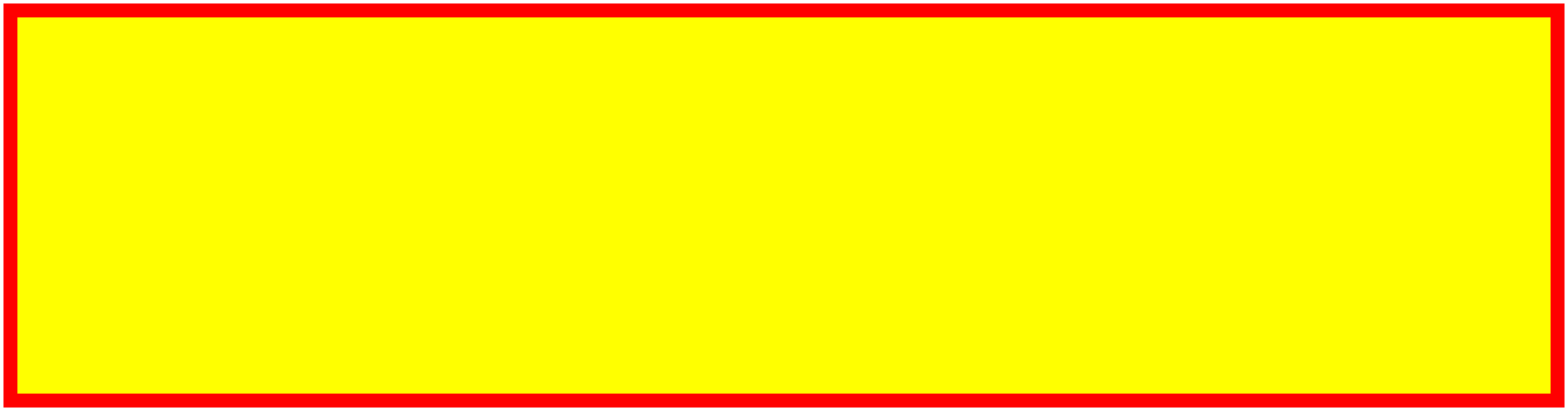
4.7

Writing Equations in Point-Slope Form

DO NOW

Write an equation of the line that passes through (-2, 2) and (0,8) .

POINT-SLOPE FORM of a Linear Equation



To use the point-slope form, you need two things:

m = the slope

(x_1, y_1) = any given point

Example

$$y - y_1 = m(x - x_1)$$

a) **Write an equation in point-slope form of the line that passes through the point (-2,4) with a slope of 3.**

Example

$$y - y_1 = m(x - x_1)$$

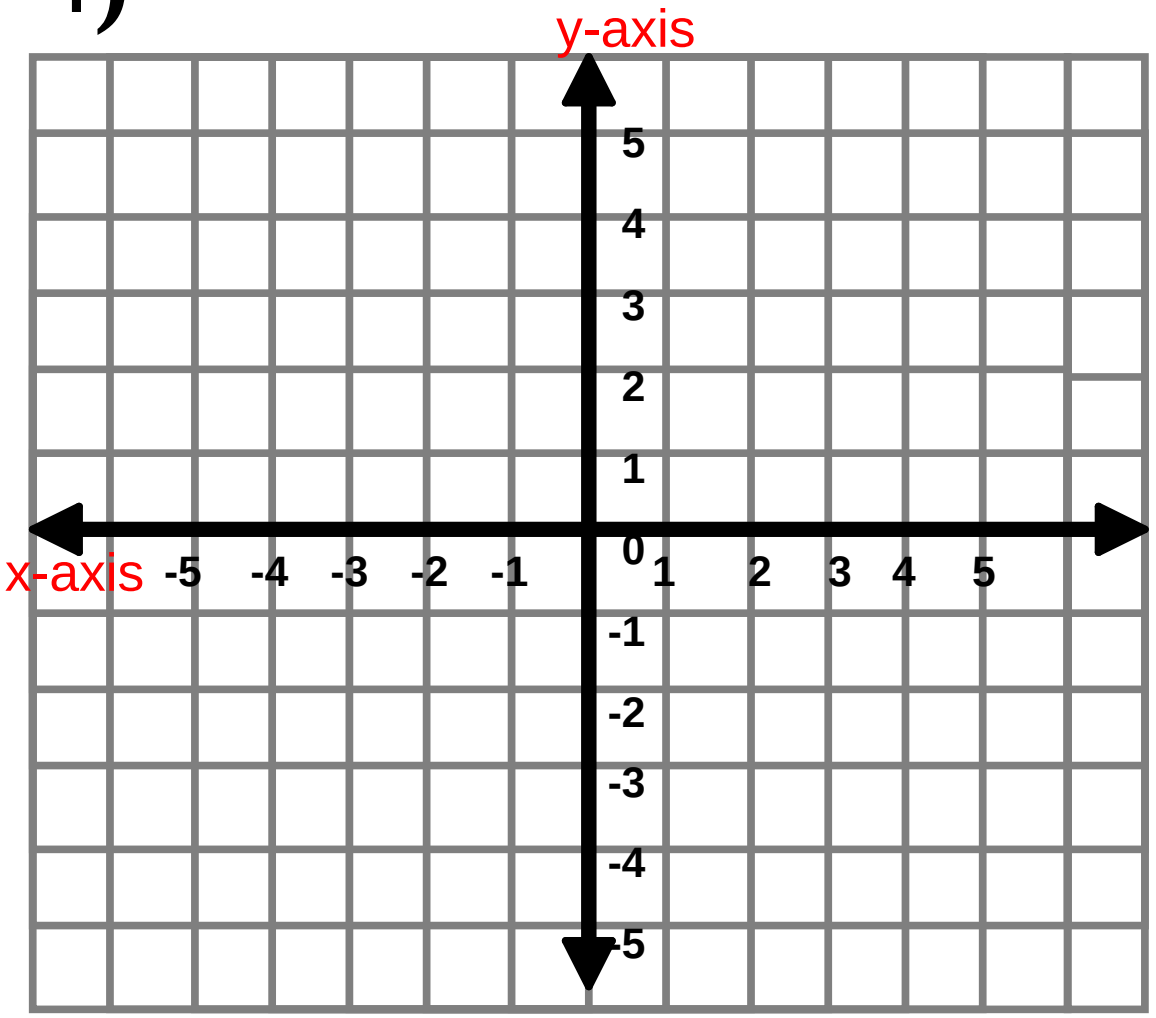
b) Write an equation in point-slope form of the line that passes through the point (5,-2) with a slope of -4.

Example

$$y - y_1 = m(x - x_1)$$

c) Graph the equation

$$y + 3 = 2(x - 4)$$

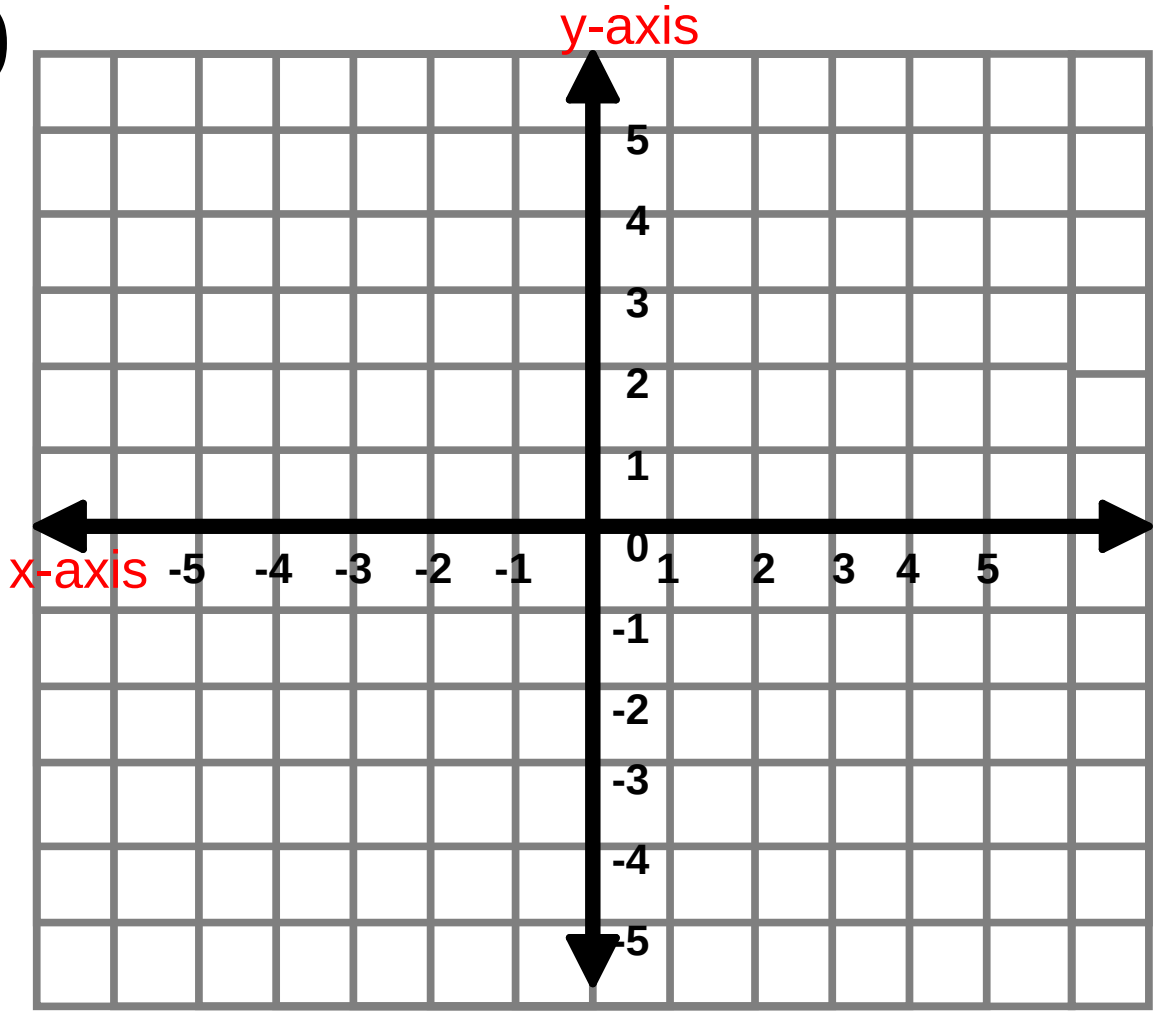


Example

$$y - y_1 = m(x - x_1)$$

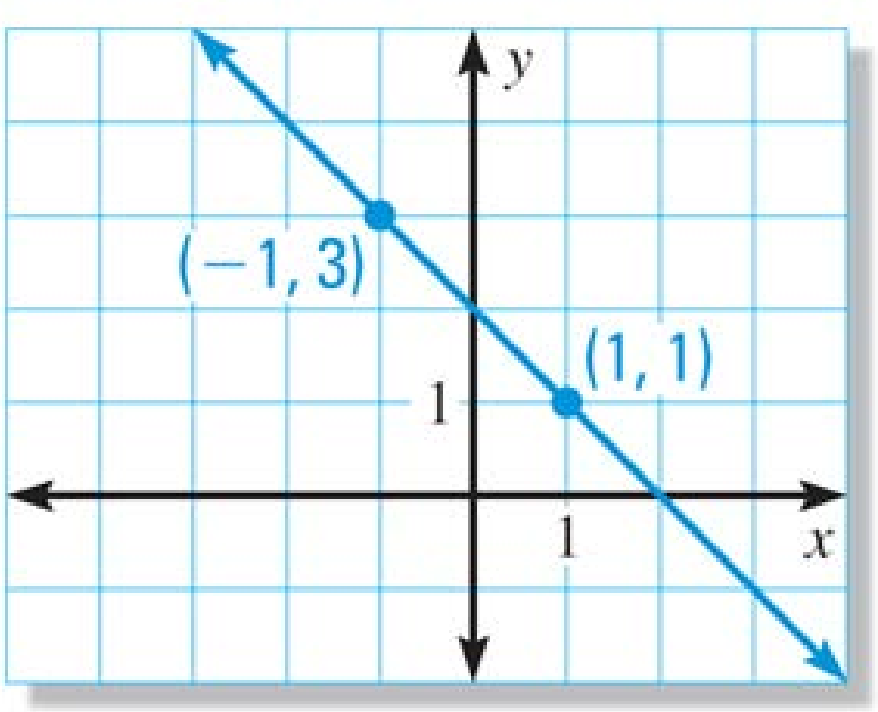
d) Graph the equation

$$y + 2 = \frac{2}{3}(x - 3)$$



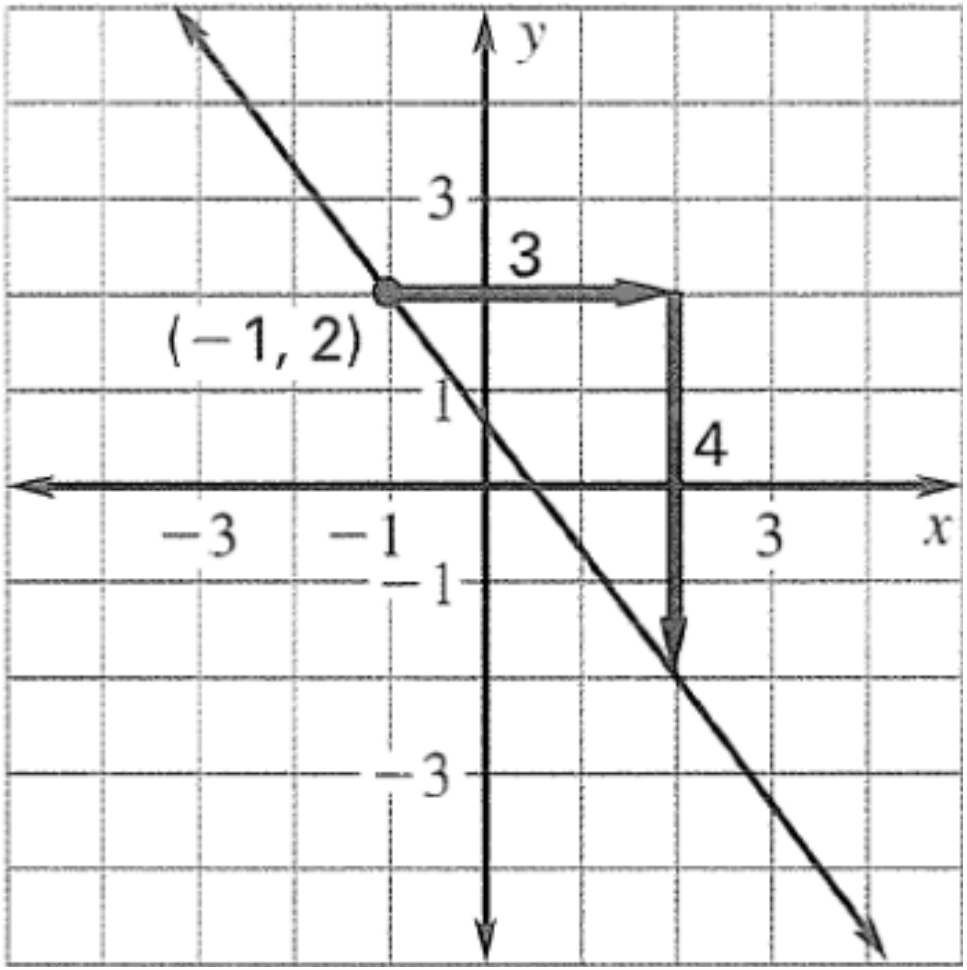
Example

e) **Write an equation of the line the graph in point-slope form.**



Example

f) Write an equation of the line the graph in point-slope form.



Practice

Write an equation in point-slope form of the line that passes through the given point and has the given slope *m*.

1. $(1, 9); m = -3$

Practice

Write an equation in point-slope form of the line that passes through the given point and has the given slope *m*.

2. $(4, -10); m = 2$

Practice

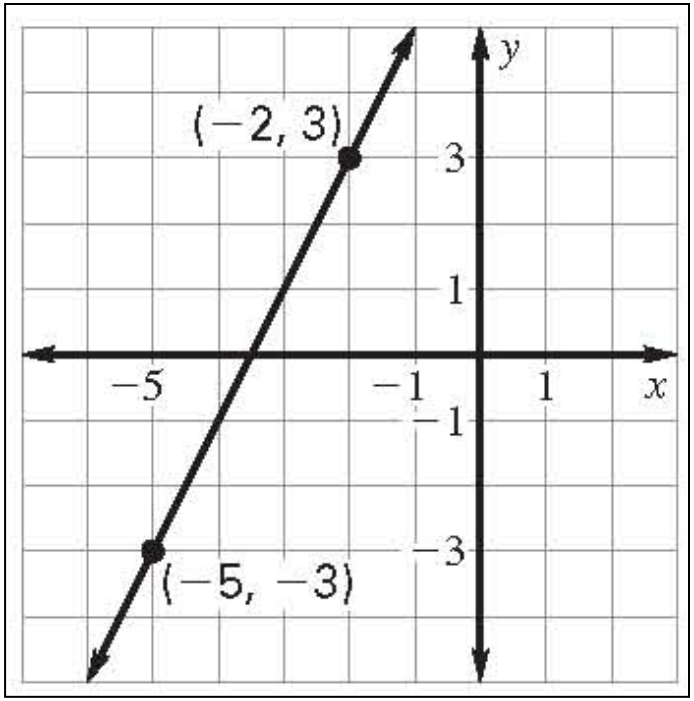
Write an equation in point-slope form of the line that passes through the given point and has the given slope *m*.

3. $(-5, 6);\ m = 4$

Practice

Write an equation in point-slope form of the line shown.

4)



Practice

Write an equation in point-slope form of the line shown.

5)